

GENERAL INDEX TO VOLUME XX

New scientific names of plants and the final members of new combinations are printed in bold face type; synonyms and page numbers having reference to figures and plates, in *italics*; and previously published scientific names and all other matter, in ordinary type.

A

Acarospora molybdina, 20; *peltasticta*, 20; *Schleicheri*, 20
Achaetogeron, 23
Acrotichum areolatum, 69
Actinea Richardsonii, 797
Adiantum, 50; *Capillus-Veneris*, 50; *pedatum*, 50
Alectoria Fremontii f. *perfertilis*, 10, subsp. *olivacea*, 10; *implexa* f. *fusculula*, 10; *japonica*, 10; *jubata* var. *prolixa*, 10, var. *Vrangiana*, 10; *laeta*, 10; *lata*, 10; *ochroleuca*, 10; *osteina*, 10; *sarmentosa*, 10, var. *gigantea*, 10; *Vrangiana*, 10
Alisarin, effect of, on growth of *Endomyces capsulatus*, 529
Allen, Caroline K. A monograph of the American species of the genus *Halenia*, 119
Allomarkgrafia, 625; *ovalis*, 626; *plummeriaeflora*, 627
Amblyanthera, 645; *acutiloba*, 649; *andina*, 665; *Andrieuxii*, 688; *angustifolia*, 640; *antennacea*, 741; *Benthamii*, 774; *Bogotensis*, 677; *brachyloba*, 670; *Bridgesii*, 693; *campestris*, 763; *ciliata*, 763; *citriifolia*, 638; *Claussenii*, 764; *congesta*, 676; *convolvulacea*, 687; *Cuyabensis*, 752; *Fendleri*, 758; *fluminensis*, 763, *a. Stadelmeyeri*, 763, *β. Clausenii*, 763; *foliosa*, 658; *funiformis*, 697, *a. peduncularis*, 697, *β. brevipedunculata*, 697, *γ. microphylla*, 697, *δ. arenaria*, 697; *Guianensis*, 740; *hirsuta*, 763; *hispida*, 763, *β. tomentosa*, 763; *Karwinskii*, 657; *membranacea*, 744; *mexicana*, 660; *microcalyx*, 744, *a. hirtiflora*, 744, *β. trichantha*, 744, *γ. leiantha*, 744, *δ. leiophylla*, 744, *ε. glabra*, 744; *Moritziana*, 768; *Oaxacana*, 686; *ovata*, 764; *palustris*, 763, *β. almadensis*, 763; *Pavonii*, 749; *Prieurei*, 740; *Schlimi*, 759; *Spruceana*, 776; *suaveolens*, 695; *torosa*, 656; *tubiflora*, 648; *versicolor*, 752, *β. intermedia*, 755
Amesia gigantea, 802
Ammonia in relation to growth of orchid seedlings, 234, 369
Anartia Bogotensis, 677
Angadenia, 645; *Prieurii*, 740; *reticulata*, 752
Anisobolus Pohlianus, 733
Anonymus carolinensis, 316
Aphanostephus, 23

Aplopappus gymnocephalus, 797
Apocynaceae, Studies in the. IV, 605
Aquilegia longissima, 800
Arabinose, growth of orchid seedlings in solutions containing, 574, 576
Arceuthobium vaginatum, 799
Arctostaphylos pungens, 798
Asclepias glaucescens, 796
Aspicilia calcarea, 14
Aspidium, 66; *acrostichoides*, 63, var. *incisum*, 64; *schweinitzii*, 64
Asplenium, 51; *acrostichoides*, 55; *angustifolium*, 54; *Athyrium*, 55; *Bradleyi*, 51; *cryptolepis*, 51; *ebeneum*, 53; *ebenoides*, 52; *Filix-foemina*, 56; *Michauxii*, 56; *parvulum*, 53; *pinnatifidum*, 52; *platyneuron*, 53, var. *incisum*, 53; *pycnocarpon*, 54; *resiliens*, 53; *Ruta-muraria*, 52; *thypteroides*, 55; *Trichomanes*, 54
Astranthium, 23, 29; *integrifolium*, 34, 40, var. *ciliatum*, 35, 44, var. *rosulatum*, 36, 44; *mexicanum*, 32, var. *chihuahuense*, 32, 42; *minimum*, 30; *orthopodium*, 31; *purpurascens*, 33; *xanthocomoides*, 33; *xylopodium*, 31
Astranthium and related genera, 23
Athyrium 54; *acrostichoides*, 54; *angustifolium*, 54; *angustum*, 56, var. *elatum*, 56, var. *rubellum*, 56; *asplenioides*, 55; *Filix-foemina*, 55; *pycnocarpon*, 54; *thypteroides*, 55
Azolla, 75; *caroliniana*, 75

B

Bacidia fusciorubella, 19; *minuscule* var. *Beckhausii*, 19
Bellis, 23; *Garciae*, 24; *perennis*, 23, 24, 40; *scandens*, 23
Bellis, 29; *campestris*, 23; *ciliata*, 35; *integrifolia*, 34, 35, 36; *mexicana*, 31, 32; *mima*, 30; *nulans*, 34; *orthopoda*, 31; *parviflora*, 34; *pedunculata*, 23; *purpurascens*, 33; *xanthocomoides*, 33
Berkley, Dorothy Megowen and Earl E. Super optimal and thermal death temperatures of the cotton plant as affected by variations in relative humidity, 583
Biatra helvola, 19; *symmictera*, 19
Billardiera, 251; *explanata*, 316
Blastomyces, 103, 474; *dermatitidis*, 102, 104, 106
Blastomycoides, 85; *dermatitidis*, 104; *immittis*, 104; *tulanensis*, 104

Blastomycosis: report of case, with a study of an etiologic factor and a classification of the organism, 79; animal inoculation, 95; cultural descriptions, 98; description, 96; differential diagnosis, 90; photographs of hands affected, 118; symptomatology, 89; technique, 95; treatment, 91

Boerhaavia erioselenus, 799

Botrychium, 47; *dissectum*, 48; *obliquum*, 47, var. *dissectum*, 48, var. *tenuifolium*, 48, 78; *ternatum*, 47, var. *dissectum*, 48, var. *obliquum*, 47; *virginianum*, 48, var. *intermedium*, 49

Bouchea spathulata, 801

Bourdonia, 37; *bellidifolia*, 37; *effusa*, 38

Brachycome zanthocomoides, 33, 34; *zeranthemoides*, 33

Brickellia Coulteri, 797; Fendleri, 797

Bryophyta, new or rare, in flora of Texas, 795

Buchnera canadensis, 316

Buddleia marubifolia, 799

Buellia disciformis var. *insignis*, 16, var. *minor*, 15; *major*, 16; *punctiformis*, 16

C

Calcium, relation of growth of orchid seedlings to, 232, 366

Campanula rotundifolia, 797

Camptosorus, 57; *rhizophyllus*, 57

Carbohydrate: reactions of Endomyces, 510; Sources of, for germination and growth of orchid seedlings, 569

Carex eburnea, 801; *microdonta*, 801

Catillaria tricolor, 19

Cattleya Trianae, growth of seedlings of, 224, 363, 374, 574

Ceratia, 138

Cerebrospinal meningitis, fatal, *Endomyces capsulatus*, a causative agent of, 471

Cetraria, 12; *aleurites*, 12; *californica* var. *Tuckermanni*, 11; *caperata*, 12; *chlorophylla*, 12; *chrysanthia*, 12; *cucullata*, 11; *glauca*, 12, var. *stenophylla*, 12; *islandica*, 11; *juniperina* var. *canadensis*, 12, var. *crispata*, 12, var. *viridis*, 12; *juniperina*, var. *terrestris*, 12, var. *virescens*, 12; *lacunosa* var. *Macounii*, 12; *Merrillii*, 11; *nigricans* var. *pallida*, 11; *nivalis*, 11; *norvegica*, 12; *pinastri*, 12; *platyphylla*, 13; *scutata*, 12; *tenuifolia*, 11, var. *pseudoislandica*, f. *septentrionalis*, 11, var. *reticulata*, 11; *Tilesii*, 12; *viridis*, 12

Chariomma nobilis, 729

Cheilanthes, 57; *alabamensis*, 57; *dealbata*, 61; *Feei*, 58; *lanosa*, 58; *lanuginosa*, 58; *vestita*, 58

Chisos Mountains, 794

Chlorine, relation of growth of orchid seedlings to, 371

Cladonia, 18; *alpestris*, 18; *bacillaris*, 18; *cariosa*, 18, f. *cribrosa*, 18; *cenotea* var. *crossota*, 18; *chlorophaea*, 19; *cornuta*, 18; *crispata* var. *elegans*, 18, var. *infundibulifera*, 18; *crystalloidea*, 18; *deformis*, 18; *degenerans*, 18; *elongata*, 18, var. *ecmocyna*, 18; *fimbriata* var. *apolepta*, 19, var. *simplex* f. *major*, 19, f. *minor*, 19; *gracilis*, 18, f. *anthocephala*, 18, var. *dilatata*, 18; *pyxidata* var. *neglecta*, 19; *rangiferina*, 18, f. *nivea*, 18; *silvatica*, 18, var. *mitis*, 18; *subeervicornis* f. *turgescens*, 19; *uncialis*, 18; *verticillata*, 18

Cladothrix lanuginosa, 796

Clematis alpina, 800

Coccidioides, 82; *immitis*, 85, 104

Coccocarpia, 441, 457; *albida*, 459, 466; *asterella*, 459; *cronia*, 458, 462, var. *camporum*, 458, var. *erythrocardia*, 458, var. *granulosa*, 458, 465, var. *isidiophylla*, 458, 463, var. *lividorufa*, 463, var. *primaria*, 463, var. *prolificans*, 458, 464; *dominguensis*, 459; *elegans*, 459, 466; *epiphylla*, 459; *fibrillosa*, 459; *molybdaea*, 457; *molybdaea* var. *cronia*, 461, 462, var. *tenuior*, 463; *parmelioides* var. *cronia*, 462; *pellita*, 458, 459, var. *genuina*, 458, var. *lividorufa*, 458, var. *pannosa*, 458, var. *parmelioides*, 458, 459, var. *pyrrhocarpa*, 458, 460, var. *strigosa*, 458, 461; *pellita* var. *cronia*, 462, 463, var. *granulosa*, 465, var. *isidiophylla*, 463, var. *prolificans*, 464, var. *smaragdina*, 461, var. *tenuior*, 463; *portoricensis*, 458; *subtilis*, 458; *tenuissima*, 459

Cocoanut fiber, growth of orchid seedlings in, 577

Coenogoniaceae, 394

Coenogonium, 395; *acrocephalum*, 396; *andinum*, 396, 399; *complexum*, 397; *confervoides*, 396, 399; *controversum*, 398; *depressum*, 397, 402; *dialeptizum*, 397; *disjunctum*, 396; *Echinus*, 396; *heterotrichum*, 396, 400; *implexum*, 402; *interplexum*, 397, 401; *interponendum*, 397, 400; *interpositum*, 396, 401; *Leprieurii*, 396, 397, var. *panniforme*, 397; *Leprieurii* var. *subvirescens*, 397; *Linkii*, 396, 398; *Linkii* var. *Leprieurii*, 397; *moniliforme*, 396, 397; *pannosum*, 397, 402; *pulvinatum*, 397; *subvirescens*, 396, 397; *Tuckermanni*, 397

Collema, 404, 408; *bauculiferum*, 409; subg. *Blennothallia*, 409; *bullatum*, 427, var. *dactylinoideum*, 427, var.

sertatum, 428; *chilenum*, 409; subg. *Collemodiopsis*, 408, 409; *corynesporum*, 409; *crenatum*, 409; *cyrtaspis*, 409, 412; *diaphanum*, 421; subg. *Dicollema*, 409, 411; *glaucocephalum*, 409, 413, var. *brasiliense*, 409, var. *granatense*, 409, 413, var. *typicum*, 409; *glaucocephalum*, 413; *Granadillae*, 408, 410; *implicatum*, 409, 414; *Lactuca*, 408; *leptosporum*, 409; *leucocarpum*, 409; *leucopepla*, 409, 411; *lherminieri*, 408, 410; *mexicanum*, 409; *millegranum*, 409; *moluccanum*, 436; *nigrescens*, 17, 409, var. *caesium*, 411; *nigrescens* var. *leucopepla*, 411; *oblique-peltatum*, 405; *olivaceum*, 424; *phyllocarpum*, 428; *pycnocarpoides*, 409; *pycnocarpum*, 409, 411, 412, var. *crassiusculum*, 409, 412, var. *Malmi*, 409, 412, var. *Minarum*, 409, 411, var. *typicum*, 409; *pycnocarpum*, 411, 412, f. *crassiusculum*, 412; *Ramboi*, 409, 415; *saturninum*, 422; *solenarium*, 409, *stellatum*, 409; subg. *Synechoblastus*, 409, 413; *turgidulum*, 409; *vesicatum*, 431

Collemaceae, 404

Coreopsis lanceolata, 797

Cornicularia divergens, 11

Costa Rica: botanical exploration in, 385; floristics of, 390; the foliose and fruticose lichens of, 1, 373; geography of, 376; map of, 376

Cotton plant, Super optimal and thermal death temperatures of, as affected by variations in relative humidity, 583

Crone's solution for growing orchids, 364

Cryptococcaceae, 104

Cryptococcus, 82, 474; *dermatitidis*, 85, 103; *gilchristi*, 85, 103; *hominis*, 85

Crystal violet, effect of, on growth of *Endomyces capsulatus*, 533

Cupressus arizonica, 796

Cyanistieta Hookeri var. *septentrionalis*, 17

Cystopteris, 58; *bulbifera*, 59, var. *horizontalis*, 60, 78; *fragilis*, 58, 796

D

Davis Mountains, 793

Dennstaedtia, 60; *punctilobula*, 60

Dichodium, 407

Dicksonia, 60; *pilosiuscula*, 60; *punctilobula*, 60

Dicollema, 411

Diaplania, 645; *Achrestogyne*, 677; *acicularis*, 682; *acuminata*, 703; *albaviridis*, 690; *alexicaea*, 729; *androsaemifolia*, 729; *angustifolia*, 710; *atropurpurea*, 724; *atroviolacea*, 724, α . *latifolia*, 724, 1. *scandens*, 724, 2. *suberecta*, 724, β . *cuneata*, 724, γ . *cordata*, 724;

bella, 717; *boliviensis*, 716; *Buchtienii*, 730; *congesta*, 676; *crassinoda*, 703; *cuspidata*, 730; *eximia*, 706; *Fendleri*, 676; *fragrans*, 713, α . *oppositifolia*, 713, β . *ternatifolia*, 714; *Gardneriana*, 728, β . *grandiflora*, 728; *gentianoides*, 732, α . *velutina*, 732, α . **longiloba*, 732, β . *glabra*, 733, 1. *obovata*, 733, 2. *ovata*, 733, β . **longiloba*, 733, var. *Pohlana*, 733; *glabra*, 709; *illustris*, 728, α . *tomentosa*, 728, α . *rotundifolia*, 728, 1. *hirsuta*, 728, 2. *pubescens*, 728, b. *elliptica*, 728, 1. *hirsuta*, 728, 2. *pubescens*, 728, c. *oblongifolia*, 728, f. *pilosa*, 728, β . *glabra*, 729, f. *glabra*, 729; *linariaefolia*, 679; *linearis*, 733; *longiloba*, 736; *Luetzelburgii*, 698; *Martiana*, 702, α . *pubescens*, 702, β . *glabra*, 703; *mollis*, 730; *Moricandiana*, 705; *myrsiphyllum*, 682; *nobilis*, 729; *oblongifolia*, 708; *pastorum*, 679, var. *tenuifolia*, 680; *peduncularis*, 679; *pendula*, 725; *pladenia*, 730; *Pohlana*, 733; *polymorpha*, 679, α . *tenuifolia*, 679, 1. *glabra*, 680, 2. *volubilis*, 680, 3. *puberula*, 680, β . *intermedia*, 680, γ . *peduncularis*, 680, δ . *brevifolia*, 680; *pulchella*, 736; *Riedelii*, 714; *Rosa-campestris*, 728; *rotundifolia*, 730; *sancia*, 726; *Sanderi*, 720; *saponaria*, 735; *Saponariae*, 734; *scabra*, 717; *Sellowii*, 719; *spigeliaeflora*, 736, β . *longiloba*, 736; *splendens*, 707; *stenoloba*, 676; *surinamensis*, 704; *tenuifolia*, 679, 680, β . *puberula*, 679, γ . *volubilis*, 679, f. *pastorum*, 680; *tetradenia*, 730; *upatae*, 704; *urophylla*, 722; *velutina*, 732; *venulosa*, 723; *vincaeflora*, 679; *xanthostoma*, 734, a. *major*, 734, b. *minor*, 734, f. *longiloba*, 736

Diploschistes bryophiloides, 20; *canadensis*, 20

Dodge, Carroll W. The foliose and fruticose lichens of Costa Rica. I, 373

Drymaria gracilis, 797

Dryopteris, 66; *acrostichoides*, 63

Dyes: effect of various, on growth of *Endomyces capsulatus*, 523

E

Echites, 629, 646, 777; *acuminata*, 635, 744; *acutiloba*, 649; *alexicaea*, 729; *almadensis*, 763; *altescandens*, 741; *andina*, 665; *Andrieuxii*, 688; *angustifolia*, 640, 774; *antennacea*, 741; *apocymifolia*, 661; *arenaria*, 697; *asimilis*, 665; *atropurpurea*, 724; *atroviolacea*, 724; *augusta*, 789; *auriculata*, 763; *Bentharii*, 774; *bicorniculata*, 634; *bogotensis*, 677; *Boliviana*, 741; *brachyloba*, 670; *Brachysiphon*, 780;

brachystachya, 752; *bracteata*, 673, 761; *bracteosa*, 742; *breviflora*, 640; *brevipes*, 638; *Brounei*, 656; *campestris*, 762; *ciliata*, 763; *citrifolia*, 637; *Cobanensis*, 648; *coccinea*, 734, β . *ovata*, 735; *comosa*, 747; *congesta*, 675; *convolvulacea*, 687; *cordata*, 686; *Coulteri*, 657; *crassinoda*, 703; *cuspidata*, 630; *cuspidifera*, 744; *Cuyabensis*, 752; *densiflora*, 668; *dichotoma*, 644; *disadena*, 630; *emarginata*, 672; *erecta*, 672; *Fluminensis*, 763, β . *Claussenii*, 763; *fragrans*, 713; *Francisceae* var. *pallidiflora*, 764; *funiformis*, 697; *Ganabari-ca*, 697; *glandulosa*, 692; *glaucescens*, 686; *gracilis*, 743; *grandiflora*, 789, var. *major*, 789, var. *minor*, 787; *Guarantica*, 789; *Guayaquilensis*, 743; *Guianensis*, 740; *hirsuta*, 749, 762, α . *latifolia*, 763, β . *angustifolia*, 750; *hirtella*, 686, 743; *hirtiflora*, 744; *hispida*, 763; *hypoleuca*, 781; *illustris*, 727; *japurensis*, 630; *jasminiflora*, 743; *javitensis*, 775; *Karwinskii*, 657; *Lambertiana*, 787; *lanuginosa*, 782; *lasiocarpa*, 750, β . *angustifolia*, 750, γ . *Lobbiana*, 750; *laxa*, 695; *leptophylla*, 756; *linearifolia*, 640, 756; *longiflora*, 789; *macrophylla*, 678, 762; *Macrosiphon*, 783; *Manoana*, 636; *Maranhmensis*, 752; *Martiana*, 702; *membranacea*, 744; *mexicana*, 660; *microcalyz*, 744, β . *glabra*, 744; *microphylla*, 697; *minima*, 643; *mollissima*, 751; *montana*, 664; *mucronata*, 743; *multiflora*, 788; *myrtifolia*, 642; *Oaxacana*, 686; *obovata*, 705; *ovalis*, 626; *pallida*, 631; *palustris*, 763; *pastorum*, 679; *Pavonii*, 749; *peduncularis*, 679; *petraea*, 787; *pini-folia*, 787; *Pohlana*, 732, var. α . *angustifolia*, 732, var. β . *latifolia*, 732; *Prieurei*, 740; *pubescens*, 676; *pubiflora*, 752; *pulchella*, 736; *pycnantha*, 668; *pycnanthe*, 668; *repens*, 639; *Richardi*, 762; *rigida*, 631; *riparia*, 665; *Rosa-campestris*, 728; *Rosana*, 652; *rosea*, 642; *rugosa*, 754; *sacra*, 726; *Sanctae-Crucis*, 634; *scabra*, 752; *secundiflora*, 744; *Smithii*, 660; *speciosa*, 743; *spigeliaeflora*, 736; *splendens*, 707; *Stadelmeyerii*, 763; *suaveolens*, 695, 781; *subcarnosa*, 772; *subsagittata*, 743; *subsessilis*, 667; *subspicata*, 739; *surinamensis*, 630; *symphilocarpa*, 755; *tenuicaulis*, 752; *tenuifolia*, 679; *tomentosa*, 762, β . *laticordata*, 763; *torosa*, 656; *trifida*, 630, 631, f. *puberula*, 635, var. *Sanctae Crucis*, 634; *tubiflora*, 648; *tubulosa*, 630; *Velame*, 788; *velutina*, 732; *venenosa*, 728; *Veraguasensis*, 690; *versicolor*, 752; *virescens*, 784, 785; *xanthostoma*, 734

Echitoideae, The American genera of, of Apocynaceae, 605

Eclipta integrifolia, 34

Endomyces capsulatus Rewbridge, Dodge & Ayers: a causative agent of fatal cerebrospinal meningitis, 471; animal inoculations, 543; carbohydrate reactions, 510; cultural characteristics, 494; cytology, 477; dyes, reaction to, 523; gelatine liquefaction, 519; historical review, 472; hydrogen sulphide production, 519; indol and skatol reactions, 517; light reactions, 520; nitrates, reduction of, 519; oxygen, free, relation to, 518

Endomyces, 82, 103; *capsulatus*, 471, 554, 558, 558, 560, 562, 566, 568, var. *isabellinus*, 472, 473, 564; *dermatitidis*, 106, 116, 472

Endomycetaceae, 104

Eosine B, effect of, on growth of *Endomyces capsulatus*, 535

Ephebaceae, 402

Ephebia, 403

Equisetum, 69; *arvense*, 69; *hyemale* var. *robustum*, 70; *laevigatum*, 71; *praecaltum*, 70; *robustum*, 70

Eriadenia, 645; *obovata*, 771

Erioderma, 440, 455; *Leylandii*, 455; *limbatum*, 455, 456; *microcarpa*, 455; *physcioides*, 451; *polycarpum*, 455; *pulchrum*, 455; *verruculosum*, 455; *Wrightii*, 455; *Wrightii* var. *limbatum*, 456

Eriogonum Havardii, 800; *pannosum*, 800

Eriogynia caespitosa, 800

Eupatorium Parryi, 797

Euphorbia eriantha, 798

Ezadenus, 138; *alatus*, 139; *brevicornis*, 140; *parviflorus*, 140, var. β . *latifolius*, 142; *paucifolius*, 140

Ezothostemon, 645; *bracteatum*, 761; *gracile*, 743; *Javilense*, 775; *macrophyllum*, 762; *mollissimum*, 751; *speciosum*, 743

F

Fernaldia pandurata, 777

Ferns and fern allies of Missouri, 45

Festuca ligulata, 801

Filix, 59; *bulbifera*, 59; *fragilis*, 59

Frasera speciosa, 798

Fructose, growth of orchid seedlings in solutions containing, 574, 575

G

Gabura, 408

Galactose, growth of orchid seedlings in solutions containing, 574, 575

Gelatine liquefaction in cultures of *Endomyces capsulatus*, 519
Gentiana viridis, 151
Geranium caespitosum, 798
 Germination and growth of orchid seedlings, sources of carbohydrate for, 569
 Glucose, growth of orchid seedlings in solutions containing, 574, 579
Gonionema, 403; *velutina*, 403
Graphis scripta, 20
 Guadalupe Mountains, 794

H

Haemadidyon glandulosum, 692
Halenia, A monograph of the American species of the genus *Halenia*, 119
Halenia, 137; *adpressa*, 148, 218; *alata*, 139, 214; *antigonorrhoeica*, 202; *apiculata*, 178; *asclepiadea*, 205, 216; *asclepiadea*, 188; *barbicaulis*, 198, 220; *bella*, 206, 220; *bifida*, 201, 216; *Brentoniana*, 167; *brevicornis*, 140, 147, 214, var. *chihuahuensis*, 144, 214, var. *divergens*, 144, 214, var. *latifolia*, 141, 214, var. *micranthella*, 143, var. *multiflora*, 142, 214, var. *ovata*, 145, 214, var. *Tuerckheimii*, 145, 214; *caespitosa*, 184, 216; *calceoides*, 173, 214; *candida*, 161; *chlorantha*, 172; *Conzattii*, 171, 214; *crassiuscula*, 159, 214; *dasyantha*, 154, 218; *decumbens*, 178, 214; *depressa*, 162, 214, 222, var. *Brentoniana*, 167; *Dombejana*, 197, var. *a.* 194, 196, var. *brevicornis*, 182; *elata*, 155, 220; *elegans*, 203, 218; *elongata*, 175; *erythraeoides*, 140; *foliosa*, 153, 220; *gentianoides*, 152, 218; *gigantea*, 192, 218; *gracilis*, 186, 216, var. *Dombejana*, 197; *guatemalensis*, 179, 214, var. *latifolia*, 180; sect. *Haleniastrum*, 158; *Herzogii*, 195; *heterantha*, 162; *Hieronymi*, 201; *Hoppii*, 204, 216; *hygrophila*, 156, 218; *hypericoides*, 184; *inaequalis*, 150, 218; *inaequalis*, 151; *Jamesoni*, 186; *Kalbreyeri*, 206, 218; *Karstenii*, 149, 218; *Killipii*, 187, 216; *longicornu*, 178; *macrantha*, 148; *major*, 158, 218; *Mathewsii*, 188; *Meyeri Johannis*, 197, 216; *Michauxiana*, 162; *micranthella*, 143; *minima*, 193, 216; *multiflora*, 142; *nudicaulis*, 174, 214; *nutans*, 175; *Palmeri*, 171, 214; *parallela*, 157, 218; *parviflora*, 140, var. *latifolia*, 142; *paucifolia*, 140; *Pavoniana*, 197; *penduliflora*, 194, 216; *phyteumoides*, 194; *pichinchensis*, 186; *pinnifolia*, 185; *plantaginea*, 175, 214, f. *grandiflora*, 176, var. *latifolia*, 180; *platyphylla*, 173, 214; *Pringlei*, 160, 214; *pulehella*, 185, 220; *Purdiana*, 199, 218, var. *congesta*, 200, 216; *Purpusi*, 174; *pusilla*, 182, 216;

recurva, 161, 214; *reflexa*, 162; *rhyacophila*, 168, 214, var. *macropoda*, 170, var. *procumbens*, 170; *robusta*, 190, 216; *Rothrockii*, 161; *Rusbyi*, 199, 216; *scapiformis*, 174; *Schiedeana*, 172, 214; *Schultzei*, 151; *Shannonii*, 177, 214, f. *compacta*, 178; *silenoides*, 195, 216; *spatulata*, 183, 216; *sphagnicola*, 207; *stellarioides*, 152; *Stuebelii*, 190, 216; *subinvoluta*, 149, 220; sect. *Swertiella*, 139; *taruga gasso*, 191, 218; *Tolimae*, 155, 218; *Tuerckheimii*, 145; *umbellata*, 196, 216; *valerianoides*, 182; *verticillata*, 153, 218; *vincetoxicoides*, 188, 216; *viridis*, 151, 220; *Weberbaueri*, 189, 216; *Weddelliana*, 202, 216

Helleranthus quadrangulatus, 313
Heterothrix, 645; *pycnantha*, 668; *Vanheurckii*, 771

Hieracium carneum, 798

Hippochaete prealta, 70

Holocoenis Leprieurii, 397

Holodiscus dumosus, 800

Homaladenia, 645; *brevifolia*, 680; *linearifolia*, 680; *pastorum*, 680; *peduncularis*, 680; *puberula*, 680; *tenusifolia*, 680; *vincaeflora*, 680

Humidity, relative, Super optimal and thermal death temperatures of the cotton plant as affected by variations in, 583

Hydrogen ion concentrations: of nutrient solutions in relation to growth of orchids, 227, 579; various, reaction of *Endomyces capsulatus* to, 502

Hydrogen sulphide production in *Endomyces capsulatus*, 519

Hymenopappus radiatus, 798

Hypopitys sanguinea, 799

I

Indol, reaction of, to *Endomyces capsulatus*, 517

Iron in nutrient solutions for orchids, 226, 365, 572

Isoetes, 74; *Butleri*, 75; *Engelmanni*, 74; *melanopoda*, 75

J

Juniperus flaccida, 796

K

Keerlia, 37; *bellidifolia*, 37; *effusa*, 38; *linearifolia*, 33; *mexicana*, 31; *ramosa*, 24, 25; *skirrhobasis*, 24, 25

Knudson's solution for growing orchids, 365, 572, 574

Kujala, Dr. Viljo, lichens collected by, 7

L

La Garde's solution for growing orchids, 226, 234, 363, 572, 578

Laphamia quinqueflora, 798

Lappula grisea, 797

Larsen, Esther L. *Astranthium* and related genera, 23

Laseguea, 645; *acutifolia*, 673, f. *α. Guillemianiana*, 674, 1. *Griseo-olivacea*, 674, 2. *Griseo-fusca*, 674, f. *β. obliquinervis*, 674, *αα. ovata*, 674, 1. *griseo-olivacea*, 674, *ββ. obovata*, 674, f. *γ. Glabrescens*, 674, f. *δ. scabrinervis*, 674, f. *ε. glabra*, 674; *antennacea*, 741; *bracteata*, 671; *emarginata*, 673; *erecta*, 673, *α. Guillemianiana*, 673, 1. *griseo-olivacea*, 673, 2. *griseo-fusca*, 673, *β. obliquinervis*, 673, *αα. ovata*, 673, 1. *griseo-olivacea*, 673, *ββ. obovata*, 673, *γ. glabrescens*, 673, *δ. acutifolia*, 673, *ε. scabrinervis*, 673, *ζ. glabra*, 673; *foliosa*, 658; *glabra*, 673; *Guillemianiana*, 672; *Hookeri*, 671; *Mandoni*, 671; *obliquinervis*, 673; *Penlandiana*, 671; *subspicata*, 740; *venustula*, 740; *villosa*, 747

Lastrea, 66

Lathargium, 413

Lecania dimera, 14

Lecanora collocarpa, 14; *subintricata*, 14;

symmicta, 14; *umbrina*, 14

Lecidea goniophila, 19; *lapicida*, 19; *parmelioidea*, 459

Lemmopsis polyschidioides, 404

Lempholemma, 404; *compactum*, 404; *dichotomum*, 406; *Dussii*, 405; *obliquepeltatum*, 405

Lepidocollema carassense, 440

Leprocolema americanum, 404; *Finkii*, 404

Leptogidium byssoides, 403

Leptogium, 404, 416; *adpressum*, 418; *austroamericanum*, 419; *azureum*, 420, 433; *brasiliense*, 420; *bullatum*, 426; *callithamnium*, 418; *chloromelan*, 419; *chloromelan*, 420; *conchatum*, 420; *coralloideum*, 419, 430; *corrugatum*, 431; *denticulatum*, 419, 432; *diaphanum*, 418, 421; *diaphanum* f. *coralloideum*, 430; *dimorphum*, 420; subg. *Diplothallus*, 418, 420; subg. *Euleptogium*, 418, 424; *foveolatum*, 418, 425; *fusisporum*, 418; *granulare*, 419; *Hildenbrandii* var. *papillosum*, 422; *hypotrachynum*, 419; *inflexum*, 418, 423, var. *isidiosulum*, 418, 423; *laevius*, 420; *Lafayetteanum*, 420; *leptophyllum*, 432; subg. *Mallotium*, 418, 422; *marginellum*, 408, 419, 431; *matto-grossense*, 419; *megapotamicum*, 418; *microcarpum*, 419; *microstictum*, 418, 426; *moluccanum*, 436; *olivaceum*, 418,

424, var. *granulosum*, 424; *pachycheilum*, 420; *papillosum*, 418, 422; *phyllocarpum*, 419, 428, var. *campestre*, 419, 430, var. *macrocarpum*, 419, 429; *phyllocarpum* var. *coralloideum*, 430, var. *isidiosum*, 430; *pichneum*, 419; *pilcomayense*, 419; *Puigarii*, 420; *pulchellum*, 420; *punctulatum*, 421; *resupinans*, 418; *reticulatum*, 418; *saturninum*, 17; *Schiffneri*, 420; *sessile*, 419; *simplicius*, 420, 437, var. *pichneoides*, 419, 438; *Standleyi*, 420, 435; *stellans*, 420; *stipitatum*, 418, 428; *tremelloides*, 17, 416; *tremelloides*, 435, var. *azureum* f. *isidiosum*, 432, var. *impressopunctatum*, 421, var. *leptophyllum*, 432, var. *minor*, 436; *Tuckermani*, 420, 436; *ulvaceum*, 420; *vesiculosum*, 418, 426, var. *digitatum*, 427

Letharia vulpina, 11, f. *compacta*, 11

Lichen flora of North America, Contribution to the, 7

Lichen azureum, 434; *bullatum*, 426;

crispus, 408; *diaphanum*, 421; *marginellus*, 431; *melanocarpus*, 394; *pannosus*, 453; *velutinus*, 403; *vesiculosus*, 426

Lichens of Costa Rica, The foliose and

fruticose, 373

Light: white, effect of, on growth of *Endomyces capsulatus*, 521; of red, 522

Linum Schiedeanum, 799

Lithospermum viride, 797

Lobaria linita, 17; *oregana*, 17; *pulmonaria*, 17

Lobarina verrucosa, 17

Loeselia Greggii, 799

Lonicera arizonica, 797

Lorinseria areolata, 69

Lycopodium, 72; *complanatum flabelliforme*, 73; *lucidulum*, 73, var. *porophilum*, 73; *porophilum*, 73

M

Macrosiphonia, 777; *Balansae*, 788; *Berlandieri*, 783; *Brachysiphon*, 780; subgen. *Eumacrosiphonia*, 784; *Guarantica*, 789; *Hesperia*, 779; *hypoleuca*, 781; *lanuginosa*, 782; *longiflora*, 789; *longiflora* var. *Guarantica*, 790; *Macrosiphon*, 783; *Martii*, 784; *peduncularis*, 788; *petraea*, 786, var. *pinifolia*, 787, 788, var. *typica*, 787; *pinifolia*, 788, f. *glabrata*, 788, var. *intermedia*, 788, f. *peduncularis*, 788, f. *setosa*, 788; *prostrata*, 787; subg. *Telosiphonia*, 778; *Velame*, 788; *Velame* f. *goyazensis*, 788; *verticillata*, 786, *α. petraea*, 787, *β. intermedia*, 787, *γ. peduncularis*, 787, *δ. pinifolia*, 787; *virescens*, 785, var. *Missionum*, 785; *Wrightii*, 781

Magnesium, relation of growth of orchid seedlings to, 231, 366
Mahonia repens, 796
Mallotium, 422
Malmella, 440, 447; *albida*, 448, 449; *caesiocinerea*, 448, 452; *physcioides*, 448, 451; *Randii*, 448; *Santamariae*, 448, 450
Maltose, growth of orchid seedlings in solutions containing, 226, 574, 575
Mandevilla, 645; *Achrestogyne*, 677; *acutiloba*, 649; *albo-viridis*, 690; *anceps*, 774; *Andrieuxii*, 645, 688; *angustifolia*, 710; *antennacea*, 741; *apocynifolia*, 660; *atroviolacea*, 724; *attenuata*, 761; *auriculata*, 764; *Bangii*, 693; *bella*, 717; *Bentharii*, 644, 774; *bogotensis*, 677; *Bokiriana*, 741; *boliviensis*, 716; *brachyloba*, 670; *bracteata*, 761; *bracteosa*, 742; *Bridgesii*, 693; *callacatensis*, 663; *callista*, 700; *causensis*, 770; *cercophylla*, 669; *cereola*, 712; *coccinea*, 734; *congesta*, 675; *convolvulacea*, 687; *crassinoda*, 703; *cuspidata*, 730; *denticulata*, 764; *Dielisiana*, 772; *Donnell-Smithii*, 650; *equatorialis*, 689; *erecta*, 672; *subg. Eumandevilla*, 647; *eximia*, 706; *subg. Exothostemon*, 737; *Fendleri*, 758; *fluminensis*, 764; *foliosa*, 658; *fragilis*, 667; *fragrans*, 713; *funiformis*, 697; *funiformis* var. *peduncularis*, 697; *glabra*, 709; *glabra*, 771; *glandulosa*, 692; *grata*, 696; *hirsuta*, 762; *hispida*, 764; *illustris*, 727, var. *glabra*, 729, var. *typica*, 727; *immaculata*, 721; *Jamesonii*, 666; *javitensis*, 775; *Karwinskii*, 657; *lanceifolia*, 773; *lasiocarpa*, 750; *laxa*, 695; *sect. laxae*, 682; *leptophylla*, 756; *linearis*, 733; *linearis*, 756; *Lochneriana*, 690; *lucida*, 718; *Luetzelburgii*, 698; *Mandoni*, 693; *Martiana*, 702, var. *glabra*, 703, var. *typica*, 702; *mexicana*, 660; *minor*, 711; *mollissima*, 751; *montana*, 664; *montana* var. *peruviana*, 665; *sect. montanae*, 661; *Moricandiana*, 705, var. *bahiensis*, 706, var. *typica*, 705; *Moritziana*, 768; *Mueleri*, 717; *myriophyllum*, 682; *oaxacana*, 644, 686; *oblongifolia*, 708; *palustris*, 764; *parvifolia*, 753; *Pavonii*, 749; *pendula*, 725; *Pentlandiana*, 671; *permixta*, 715; *platydictyla*, 651; *polyantha*, 769; *polyantha*, 769; *potosina*, 777; *pycnantha*, 668; *riparia*, 665; *Rosana*, 652; *rugosa*, 754; *Ruebyi*, 764; *rutila*, 757; *sagittarii*, 768; *santa*, 726; *Sanderi*, 720; *scaberula*, 761; *scabra*, 752; *Schlimi*, 759; *Schlimi*, 759; *Schumanniana*, 686; *scutifolia*, 663; *Sellowii*, 719; *sertuligera*, 649, 654; *spigeliaeflora*, 736; *splendens*, 707; *Spruceana*, 776; *suave-*

colens, 695; *subcarnosa*, 644, 772; *subcarnosa*, 772; *subcordata*, 693; *subpaniculata*, 678; *subsagittata*, 644, 645, 743; *subscorpiodea*, 653; *subsessilis*, 667; *subspicata*, 645, 739; *superba*, 709; *surinamensis*, 704; *symphitocarpa*, 755; *Syrinx*, 649, 653; *tenuicarpa*, 741; *tenuifolia*, 679; *sect. tenuifoliae*, 679; *tomentosa*, 764, var. *hirsuta*, 764, var. *hispida*, 764, var. *Vahleana*, 764; *torosa*, 644, 656; *sect. torosae*, 655; *Trianae*, 760; *tubiflora*, 648; *sect. tubiflorae*, 647; *Tweedianae*, 695; *Ulei*, 771; *urophylla*, 722; *Vanheurckii*, 771; *velutina*, 731, var. *glabra*, 732, var. *typica*, 732; *velutina*, 777; *venulosa*, 723; *veraguasensis*, 690; *veraguasensis*, 690; *villosa*, 747
Manganese sulphate in nutrient solutions, 226
Mannose, growth of orchid seedlings in solutions containing, 574, 577
Matteuccia nodulosa, 65; *Struthiopteris*, 65
Media, growth of *Endomyces capsulatus* in various, 494
Meningitis, fatal cerebrospinal, *Endomyces capsulatus* as a causative agent of, 471
Mentzelia asperula, 799
Mesechites, 629; *acuminata*, 635; *Andrieuxii*, 645, 688; *angustata*, 644, 775; *angustifolia*, 640; *bicorniculata*, 634; *brevipes*, 638; *Brownei*, 644, 656; *citrifolia*, 637; *dichotoma*, 644; *subg. Didymadenia*, 638; *disadena*, 631; *subg. Eumesechites*, 630; *Guayaquilensis*, 644, 744; *Guianensis*, 645, 740; *hastata*, 644, 744; *hirtella*, 644, 744; *hirtellula*, 644, 686; *japurensis*, 630; *jasminiflora*, 644, 744; *lanceolata*, 639; *linearifolia*, 640; *Mansoana*, 636; *minima*, 643; *myrtifolia*, 642; *Oaxacana*, 644, 686; *repens*, 639; *rosea*, 641; *Sanctae-Crucis*, 634; *subcarnosa*, 644, 772; *sulphurea*, 636; *surinamensis*, 631; *torulosa*, 644, 656; *trifida*, 630, 644
Methylene blue, effect of, on growth of *Endomyces capsulatus*, 534
Micradenia, 645; *atroviolacea*, 724; *crassinoda*, 703; *fragrans*, 714; *hirtellula*, 702; *Martiana*, 702; *Moricandiana*, 706; *Riedelii*, 740; *Sellowii*, 719; *splendens*, 707; *urophylla*, 722
Missouri, Ferns and fern allies of, 45; A neutral (?) strain of *Mucor sphaerosporus* from, 469
Milozus brachystachyus, 753; *brevipes*, 638; *Cuyabensis*, 753; *exilis*, 697; *funiformis*, 697; *Guanabariensis*, 697; *leptophyllus*, 756; *microphylla*, 697; *rugosus*, 755; *symphitocarpus*, 755; *tenuicaulis*, 753; *versicolor*, 752

Monilia, 82, 103

Moore, John Adam, Steyermark, Julian A. and. Report of a botanical expedition into the mountains of western Texas, 791

Moore, Morris. Blastomycosis: report of a case, with a study of an etiologic factor and a classification of the organism, 79; A neutral (?) strain of *Mucor sphaerosporus* from Missouri, 469; A study of *Endomyces capsulatus* Rewbridge, Dodge and Ayers: a causative agent of fatal cerebrospinal meningitis, 471

Mucor sphaerosporus from Missouri, A neutral (?) strain of, 469

Mycoblastus melinus, 19; *sanguinarius*, 19, var. *Dodgeanus*, 19

Mycoderma, 474

Mycoderma dermatitis, 103

N

Nama Havardii, 799; *xylopodium*, 799

Nephrodium, 66

Nephromium canadense, 17; *laevigatum* var. *papyraceum*, 17; *subparile*, 16

Nephromopsis ciliaris, 13; *platyphylla*, 13

Nerium sarmmentosum, 642

Nitrates, reduction of, in *Endomyces capsulatus*, 519

Nitrogen in relation to growth of orchid seedlings, 234, 368.

Nothochlaena pulchella, 61

Notholaena, 60; *dealbata*, 60; *Greggii*, 796; *nivea dealbata*, 61

Nutrient solutions for orchids, 225, 363, 571

Nutritional ions, The sensitivity of orchid seedlings to, 223

Nymphaea, A new yellow, from tropical Africa, 2

Nymphaea (§ *Brachyceras*) *Burtii*, 1, 6; *Stuhlmannii*, 3; *sulphurea*, 3

O

Obletia, 251

Ochrolechia upsaliensis, 14

Odontadenia cuspidata, 730; *glandulosa*, 692

Oidium, 82, 102, 474

Onoclea, 61; *sensibilis*, 61; *Struthiopteris*, 64

Oosporaceae, 104

Ophioglossum, 46; *Engelmanni*, 47; *vulgatum*, 46

Orbilis, 396

Orchid seedlings, Nutrient solutions for, 363; The sensitivity of, to nutritional ions, 223; Sources of carbohydrate for germination and growth of, 569

Osmotic concentration, relation of, to growth of orchid seedlings, 231

Osmunda, 71; *cinnamomea*, 72; *Claytoniana*, 72; *regalis spectabilis*, 71; *Struthiopteris*, 64

Ostrya Baileyi, 797

Oxygen, free, relation of *Endomyces capsulatus* to, 518

P

Pannaria, 440, 441; *applanata*, 441; *brasilensis*, 442; *caeruleo-nigricans*, 442; *imbricatula*, 442; *isidioides*, 442, var. *pulvinata*, 443; *Malmi*, 441; *Mariana* var. *isidioides*, 442, f. *radiata*, 446; *Moseni*, 442, 443; *radiata*, 442, 446; *rubiginosa*, 441; *rubiginosa*, 443, 445, f. *caesiocinerea*, 452, f. *cinerascens*, 452; *stylophora*, 442, 445; *Vainii*, 442, 445

Pannariaceae, 438

Parmelia ambigua, 13; *cronia*, 462; *Delavayi*, 13; *diaphana*, 421; *elegantula* var. *americana*, 14; *enteromorpha*, 13; *ezasperatula*, 13; *hyperopia*, 13; *lividorufa*, 463; *lophyrea*, 13; *molliuscula*, 13; *pallascens*, 13; *papulosa*, 13; *pellita*, 459; *physodes* f. *labrosa*, 13, f. *vittata*, 13; *pubescens* var. *reticulata*, 14; *subaurifera*, 13; *sulcata*, 13; *vagans*, 13; *vittata*, 13

Parmeliella, 440, 452; *corallinoides*, 453; *microphylloides*, 453; *miradorensis*, 453; *nigrocincta*, 453, var. *Weddellii*, 453; *pannosa*, 453, var. *coralloides*, 454; *triptophylla*, 453

Parsonsia bracteata, 671

Patinella, 396

Pellaea, 61; *atropurpurea*, 62, var. *Bushii*, 62, var. *cristata*, 62; *dealbata*, 61; *glabella*, 62

Peltigera aphthosa, 16; *canina*, 16, var. *membranacea*, 16, var. *suomensis*, 16; *horizontalis*, 16; *lepidophora*, 16; *malacea*, 16; *Maurizii*, 16; *microphylla*, 16; *Nylanderii*, 16; *perfidia*, 16; *rufescens*, 16; *suomensis*, 16; *variolosa*, 16; *venosa*, 16

Pentoses, growth of orchid seedlings in, 576

Pentstemon baccharifolius, 801

Perityle Parryi, 798

Perry, Lily M. A revision of the North American species of *Verbena*, 239

Pertusaria amara, 14; *faginea*, 14; *multi-puncta*, 14; *pertusa*, 14; *xanthostoma*, 14

Phegopteris, 66; *hexagonoptera*, 68

Phlyctis argenta, 14

Phosphorus, growth of orchids in solution containing, 233, 367

Phryma carolinensis, 309

Physcia, 15; *adglutinata* var. *pyrithro-*

- cardia*, 15; *astroidea*, 15; *caesia*, 15;
Clementiana, 15; *endophoenicea*, 15;
grisea var. *semifarrea*, 15; *muscigena*,
 15, f. *lenta*, 15, f. *squarrosa*, 15; *pyri-*
throcardia, 15; *stellaris*, 15, var. *rosu-*
lata, 15
Physma, 404; *Boryanum*, 407; *hyrsinum*,
 408; *pruinatum*, 408
Pilophoron aciculare, 17
Pinaropappus parvus, 798
 Pinkerton, M. Elizabeth. Ferns and
 fern allies of Missouri, 45
Placodium chrysodetum, 15; *citrinum*,
 15; *elegans*, 15; *ferrugineum*, 15;
xanthostigmoideum, 15
Platyema septentrionale, 12
Polychidium, 403
Polygala rimulicola, 800
Polypodium, 62; *incanum*, 63; *polypodi-*
oides, 63; *virginianum*, 63; *vulgare*, 63
Polystichum, 63, 66; *acrostichoides*, 63,
 var. *incisum*, 64, var. *Schweinitzii*, 64
Polystichum, 63
Potamogeton clystocarpus, 802; *diversi-*
folius, 802
 Potassium in relation to growth of orchid
 seedlings, 231, 234, 361
Prestonia hirsuta, 749; *peruviana*, 692
Prestoniopsis Fendleri, 676; *hirsuta*, 676;
pubescens, 676; *venosa*, 676
 Pring, George H. and Robert E. Wood-
 son, Jr. A new yellow *Nymphaea*
 from tropical Africa, 1
Prunus Havidii, 800
Psora decipiens, 19
Psoroma cinchonarum, 440
Pteritis, 64; *nodulosa*, 64
Pteridium, 65; *aquilinum*, 65; *latiuscu-*
lum, 65, var. *pseudocaudatum*, 65
Pteridophyta, new or rare, in Texas, 796
Pterigopsis atra, 403
Pteris aquilina, 65
Pterospora Andromeda, 799
- Q
- Quercus hypoleuca*, 798
- R
- Raffinose, growth of orchid seedlings in
 solutions containing, 574
Ramalina calicaris, 11; *geniculata*, 11;
Roesleri, 11; *thrausta*, 11
 Räsänen, Veli J. P. B. Contribution to
 the lichen flora of North America, 7
 Report of a botanical expedition into
 the mountains of western Texas, 791
Rhabdadenia campestris, 763
 Rhamnose, growth of orchid seedlings
 in solutions containing, 574, 576
Rhamnus fasciculata, 800
Rhodocalyx coccineus, 734; *hypoleucus*,
 781; *lanuginosus*, 782; *ovatus*, 735;
suaveolens, 781; *Tweedianus*, 735
Ribes mescaleirum, 800
Riella americana, 795
Rinodina demissa, 15
 Rio Grande, canyons of the, 794
Robinia luxurians, 799
Roccellaceae, 394
Rosa mirifica, 800
- S
- Saccharomycetaceae*, 104
Saccharomyces, 82, 103, 474; *hominis*, 103
Salep, 577
 Salt per cent, relation of growth of
 orchid seedlings to, 371
Scytinium, 408
Secondaria stans, 659
Selaginella, 74; *apoda*, 74; *apus*, 74;
Pringlei, 796; *rupestris*, 74
 Sensitivity of orchid seedlings to nu-
 tritional ions, 223
 Shive's solution for growing orchids, 572,
 575
Shuttleworthia, 251
Siphula ceratites, 14
Sisymbrium diffusum, 798
 Skatol, reaction of, to *Endomyces cap-*
sulatus, 517
 Sodium borate in nutrient solutions, 226
Solidago Wrightii, 798
Solorina saccata, 17
Sorghastrum nutans, 801
Spermatophyta, new or rare, in Texas,
 796
Sphaerophoraceae, 393
Sphaerophorus globosus var. *lacunosus*,
 20; *melanocarpus*, 394; *Tuckermanii*,
 20
Sphenopholis obtusata, 801
Spilanthes, 23
Spiranthes saltensis, 802
Sporotrichum, 82
Squamaria alphoplaca, 14
Staurothele circinata, 20
Stephanophorus, 424
Stereocaulon tomentosum, 14
 Steyermark, Julian A., John Adam
 Moore and. Report of a botanical
 expedition into the mountains of
 western Texas, 791
Sticta scrobiculata, 17
Stictina fuliginosa, 17
Struthiopteris germanica, 65
 Study Butte area, 794
Styleurodon carolinianum, 309
 Sucrose, growth of orchid seedlings in
 solutions containing, 574, 576
 Sugars, growth of orchid seedlings in so-
 lutions containing various, 226, 571
 Sulphate, relation of growth of orchid
 seedlings to, 368

Super optimal and thermal death temperatures of the cotton plant as affected by variations in relative humidity, 583

Suertia, 138; *americana*, 162; *asclepiadea*, 205; *brevicornis*, 140; *corniculata*, 162; *cucullata*, 140; *deflexa*, 162; *gracilis*, 186; *hypericoides*, 184; *Michauxiana*, 162, 172; *parviflora*, 140, var. *angustifolia*, 140, var. *latifolia*, 142; *pinifolia*, 185; *plantaginea*, 175; *quadrifloris*, 205; *recurva*, 161; *umbellata*, 191
Symphoricarpos rotundifolius, 797
Synechoblastus, 413

T

Temnadenia, 646; *cordata*, 686, *glaucescens*, 686; *lasiocarpa*, 750; *Lobbiana*, 750; *pallidiflora*, 764; *palustris*, 764; *secundiflora*, 744; *tomentosa*, 764; *zanthostoma*, 735

Temperature chamber for treating cotton plants, 585, 586

Temperatures: reaction of *Endomyces capsulatus* to, 500; Super optimal and thermal death, of the cotton plant as affected by variations in relative humidity, 583

Tetragonanthus, 138; *alatus*, 139; *Brentonianus*, 167; *brevicornis*, 140; *decumbens*, 178; *deflexus*, 163, var. *Brentonianus*, 167, var. *heteranthus*, 163; *heterantherus*, 163; *heteranthus*, 163; *longicornis*, 178; *Palmeri*, 171; *parviflorus*, 140; *paucifolius*, 140; *plantagineus*, 175; *Rothrockii*, 161; *Schiedeanus*, 172; *Whitei*, 188

Texas: Report of a botanical expedition into the mountains of western, 791; species new or rare in the flora of, 795, additional records of interest, 802

Thamnia vermicularis, 14

Thelypteris, 66; *hexagonoptera*, 68; *marginalis*, 67; *palustris pubescens*, 66; *spinulosa*, 67, var. *intermedia*, 67; *Thelypteris*, 66

Thermutis, 403; *velutina*, 403

Tillandsia recurvata, 801

Trachelospermum stans, 659

Tradescantia Wrightii, 801

Trentepohlia, 396

U

Usnea caucasica, 9; *comosa*, 9, var. *stuppea*, 9; *dasypoga*, 9, var. *subcapitata*, 9; *hirta*, 9; *Kujalae*, 9; *lapponica*, 9; *longissima*, 9; *prostrata*, 9; *rugulosa*, 9; *similis*, 9; *subcomosa*, 9

Uvarovia, 251

V

Valeriana texana, 801

Vauquelinia angustifolia, 800

Venturiella sinensis, 796

Verbena, A revision of the North American species of, 239

Verbena, 251; *affinis*, 257; *Alopecurus*, 285; *ambrosiifolia*, 326, f. *eglandulosa*, 328; *amoena*, 341; *Andrieuxii*, 333; *angustifolia*, 282; *arizonica*, 300, 337; *Aubletia*, 315, var. *Drummondii*, 316; *Aubletia* var. *Lamberti*, 343; *barbata*, 342; *bipinnatifida*, 323, var. *latilobata*, 325; *biserata*, 268; *bonariensis*, 254; *bonariensis* var. *littoralis*, 257, var. *rigida*, 253; *bracteata*, 304, 358; *bracteosa*, 304, var. *albiflora*, 304, var. *brevibracteata*, 304; *brasiliensis*, 255; *brevibracteata*, 338; *canadensis*, 315, 358; *canadensis* var. *Ehrenbergii*, 318, subsp. *elegans*, 318, var. *Lamberti*, 316; *canescens*, 301, var. *Roemeriana*, 302; *canescens*, 304, var. *neomexicana*, 296; *caracasana*, 257; *carnea*, 309; *carolina*, 268; *caroliniana*, 268, 309, f. or var. *polystachya*, 268, f. or var. *recta*, 271; *carolinensis*, 309; *ciliata*, 330, var. *longidentata*, 331, var. *pubera*, 332; *confinis*, 304; *cuneifolia*, 286; *delicatula*, 342; *delticola*, 314; *diffusa*, 275; *domingensis*, 262; *Drummondii*, 316; *Ehrenbergiana*, 267; *elegans*, 318, var. *asperata*, 319; *elongata*, 254; *erinoides*, 341; *erilis*, 334; *Gooddingii*, 335, var. *nepetifolia*, 337; *gracilis*, 300; *grandiflora*, 341; *grandiflora*, 342; *Halei*, 265; *Hansenii*, 257; *hastata*, 278; *hastata* var. *oblongifolia*, 267, var. *paniculata*, 278, f. *rosea*, 278, var. *pinnatifida*, 278; *hirsuta*, 268; *imbricata*, 304; *incarnata*, 342; *inconspicua*, 338; *integrifolia*, 342; *Lamberti*, 316, var. *rosea*, 316; *lasistachys*, 290; *leucanthemifolia*, 265; *lilacina*, 340; *littoralis*, 257; *littoralis* var. *brasiliensis*, 255, var. *caracasana*, 257; *littoralis* β. *leptostachya*, 257, α. *pyncnostachya*, 257; *longiflora*, 315; *longifolia*, 272; *Lucaeana*, 293; *MacDougalii*, 288; *MacDougalii* mut. *rosella*, 288; *macrodonata*, 289, 558, 360; *maritima*, 320; *Matthesii*, 342; *menthaefolia*, 263; *mollis*, 268, 286; *moranensis*, 318; *neomexicana*, 296, var. *hirtella*, 298, var. *xylopoda*, 297; *Obletia*, 315; *Obletia*, 315; *officinalis*, 262; *officinalis* var. *hirsuta*, 296; *Orcuttiana*, 284; *paniculata*, 278, var. *pinnatifida*, 278; *pauciflora*, 268; *paucifolia*, 268; *paucifolia*, 342; *perennis*, 299; *pinnatifida*, 278; *plicata*, 294; *polystachya*, 268; *prostrata*, 290; *pu-*

bera, 332; *pulchella*, 332; *pumila*, 338; *pumila* f. *albiflora*, 313; *quadrangularis*, 254; *quadrangulata*, 313; *racemosa*, 332; *recta*, 271; *remota*, 300; *repens*, 342; *rigens*, 286; *rigida*, 252; *riparia*, 267; *robusta*, 292; *Roemeriana*, 302; *rubra*, 316; *rudis*, 304; *rugosa*, 282; *scabra*, 272; *scabra*, 272; *scabrella*, 343; *setacea*, 339, 362; *setosa*, 263; *simplex*, 282; *sphaerocarpa*, 256; *spuria*, 262; *squarrosa*, 304; *stricta*, 285; *stricta* f. *albiflora*, 286, β . ? *mollis*, 286, f. *roseiflora*, 286; *strigosa*, 293; *subuligera*, 303; *tampensis*, 321; *teucriifolia*, 334, var. *corollulata*, 335; *trifida*, 342; *tumidula*, 322; *urticifolia*, 275; *urticifolia* var. *riparia*, 267, var. *simplex*, 275; *venosa*, 252; *verna*, 337, var. *fissa*, 335; *veronicaefolia*, 268; *Wrightii*, 328, 358; *xutha*, 293

W

Woodsia, 68; *obtusa*, 68
Woodson, Robert E., Jr. Studies in the Apocynaceae. IV, 605; George H.

Pring, and. A new yellow *Nymphaea* from tropical Africa, 1
Woodwardia, 69; *angustifolia*, 69; *areolata*, 69
Wynd, F. Lyle. Nutrient solutions for orchids, 363; The sensitivity of orchid seedlings to nutritional ions, 223; Sources of carbohydrate for germination and growth of orchid seedlings, 569

X

Xanthocephalum, 24; *linearifolium*, 25
Xanthoria polycarpa, 15
Xylose, growth of orchid seedlings in solutions containing, 574, 576

Y

Yeast-like organisms, 471; cytology of, 477

Z

Zapania bracteosa, 304
Zygadenus elegans, 801